CLAIMS

What is claimed is:

1. A distance measuring system comprising:

a housing with at least one surface;

at least one switch along the one surface of the housing, the switch having an inactivated position and an activated position when pressed against an origination object, the activated position of the switch identifies the surface as a reference plane with respect to the origination object;

an energy system in the housing, the energy system transmits energy towards a target when the switch is in an activated position and receives at least a portion of the energy which is reflected back from the target; and

a distance computation system coupled to the energy system, the distance computation system uses the received portion of the energy which is reflected back and the identification of the surface as the reference plane to determine a distance from the origination object to the target.

2. The system as set forth in claim 1 wherein the energy system further comprises:

a projected energy device that transmits the energy; and

an energy receiving device that receive a reflected portion of the energy.

3. The system as set forth in claim 1 where the energy is at least one of electromagnetic and acoustic.

4. The system as set forth in claim 1 wherein the distance computation system uses a propagation time of the received portion of the energy from a start time when the energy system transmits the energy to a received time when the energy system receives the portion of the energy which is reflected back from the target and the identification of the surface as the reference plane to determine the distance from the origination object to the target.

5. The system as set forth in claim 1 further comprising:

a second switch on the housing, the second switch having an inactivated position and an activated position, the activated position of the second switch identifies the second surface as a reference plane with respect to the origination object;

the energy system transmits energy towards a target when the second switch is in an activated position and receives at least a portion of the energy which is reflected back from the target;

the distance computation system uses the received portion of the energy which is reflected back and the identification of the second surface as the reference plane to determine a distance from the origination object to the target.

6. The system as set forth in claim 5 wherein

the first switch comprises a button which extends out from the first surface in the inactivated position and which is substantially flush with the first surface in the activated position when pressed against the origination object; and

wherein the second switch comprises a button which extends out from a second surface of the housing in the inactivated position and which is substantially flush with the second surface when the button is in an activated position.

7. The system as set forth in claim 5 wherein:

the first switch comprises a button which extends out from the first surface in the inactivated position and which is substantially flush with the first surface in the activated position when pressed against the origination object; and

wherein the second switch comprises an L-shaped structure which is slidably mounted on a third surface of the housing for movement between the inactivated position and the activated position where an inner surface of the L-shaped structure is in substantially the same plane as the second surface.

8. The system as set forth in claim 5 further comprising:

a third switch along a third surface of the housing, the third switch having an inactivated position and an activated position when the third switch is moved relative to the housing, the activated position of the third switch identifies the second surface as a reference plane with respect to the origination object;

the energy system transmits energy towards a target when the third switch is in an activated position and receives at least a portion of the energy which is reflected back from the target;

the distance computation system uses the received portion of the energy which is reflected back and the identification of the second surface as the reference plane to determine a distance from the origination object to the target.

9. The system as set forth in claim 8 wherein:

the first switch comprises a button which extends out from the first surface in the inactivated position and which is substantially flush with the first surface in the activated position when pressed against the origination object;

the second switch comprises a button which extends out from a second surface of the housing in the inactivated position and which is substantially flush with the second surface when the button is in an activated position; and

the third switch comprises an L-shaped structure which is slidably mounted on the third surface of the housing for movement between the inactivated position and the activated position where an inner surface of the L-shaped structure is in substantially the same plane as the second surface.

10. The system as set forth in claim 5 wherein the energy system further comprises:

a projected energy device that transmits the energy; and

an energy receiving device that receive a reflected portion of the energy.

11. The system as set forth in claim 5 where the energy is at least one of electromagnetic and acoustic.

12. The system as set forth in claim 5 wherein the distance computation system uses a propagation time of the received portion of the energy from a start time when the energy system transmits the energy to a received time when the energy system receives the portion of the energy which is reflected back from the target and the identification of the surface as the reference plane to determine the distance from the origination object to the target.

13. A method for making a distance measuring system, the method comprising:

providing a housing with at least one surface;

providing at least one switch along the one surface of the housing, the switch having an inactivated position and an activated position when pressed against an origination object, the activated position of the switch identifies the surface as a reference plane with respect to the origination object;

placing an energy system in the housing, the energy system transmits energy towards a target when the switch is in an activated position and receives at least a portion of the energy which is reflected back from the target; and

coupling a distance computation system to the energy system, the distance computation system uses the received portion of the energy which is reflected back and the identification of the surface as the reference plane to determine a distance from the origination object to the target.

14. The method as set forth in claim 13 wherein the placing the energy system further comprises placing an energy system comprising:

a projected energy device that transmits the energy; and

an energy receiving device that receive a reflected portion of the energy.

15. The method as set forth in claim 13 where the energy is at least one of electromagnetic and acoustic.

16. The system as set forth in claim 13 wherein the coupling the distance computation system further comprises a distance computation system that uses a propagation time of the received portion of the energy from a start time when the energy system transmits the energy to a received time when the energy system receives the portion of the energy which is reflected back from the target and the identification of the surface as the reference plane to determine the distance from the origination object to the target.

17. The method as set forth in claim 13 further comprising:

putting a second switch on the housing, the second switch having an inactivated position and an activated position, the activated position of the second switch identifies the second surface as a reference plane with respect to the origination object;

the energy system transmits energy towards a target when the second switch is in an activated position and receives at least a portion of the energy which is reflected back from the target;

the distance computation system uses the received portion of the energy which is reflected back and the identification of the second surface as the reference plane to determine a distance from the origination object to the target.

18. The method as set forth in claim 17 wherein:

the first switch comprises a button which extends out from the first surface in the inactivated position and which is substantially flush with the first surface in the activated position when pressed against the origination object; and

wherein the second switch comprises a button which extends out from a second surface of the housing in the inactivated position and which is substantially flush with the second surface when the button is in an activated position.

19. The method as set forth in claim 17 wherein:

the first switch comprises a button which extends out from the first surface in the inactivated position and which is substantially flush with the first surface in the activated position when pressed against the origination object; and

wherein the second switch comprises an L-shaped structure which is slidably mounted on a third surface of the housing for movement between the inactivated position and the activated position where an inner surface of the L-shaped structure is in substantially the same plane as the second surface.

20. The method as set forth in claim 17 further comprising:

putting a third switch along a third surface of the housing, the third switch having an inactivated position and an activated position when the third switch is moved relative to the housing, the activated position of the third switch identifies the second surface as a reference plane with respect to the origination object;

the energy system transmits energy towards a target when the third switch is in an activated position and receives at least a portion of the energy which is reflected back from the target;

the distance computation system uses the received portion of the energy which is reflected back and the identification of the second surface as the reference plane to determine a distance from the origination object to the target.

21. The method as set forth in claim 20 wherein:

the first switch comprises a button which extends out from the first surface in the inactivated position and which is substantially flush with

the first surface in the activated position when pressed against the origination object;

the second switch comprises a button which extends out from a second surface of the housing in the inactivated position and which is substantially flush with the second surface when the button is in an activated position; and

the third switch comprises an L-shaped structure which is slidably mounted on the third surface of the housing for movement between the inactivated position and the activated position where an inner surface of the L-shaped structure is in substantially the same plane as the second surface.

22. The method as set forth in claim 17 wherein the placing the energy system further comprises placing an energy system comprising:

a projected energy device that transmits the energy; and

an energy receiving device that receive a reflected portion of the energy.

23. The method as set forth in claim 17 where the energy is at least one of electromagnetic and acoustic.

24. The method as set forth in claim 17 wherein the coupling the distance computation system further comprises a distance computation system that uses a propagation time of the received portion of the energy from a start time when the energy system transmits the energy to a received time when the energy system receives the portion of the energy which is reflected back from the target and the identification of the surface as the reference plane to determine the distance from the origination object to the target.

25. A method for measuring a distance from an origination object to a target, the method comprising:

activating a switch in a housing, the activation identifying a surface of the housing as a reference plane with respect to a surface of the origination object;

transmitting energy towards a target in response to the activating of the switch;

receiving at least a portion of the energy which is reflected back from the target; and

using the received portion of the energy which is reflected back and the identification of the surface of the housing as the reference plane to determine a distance from the origination object to the target.

26. The method as set forth in claim 25 where the energy is at least one of electromagnetic and acoustic.

27. The method as set forth in claim 25 wherein the identified surface is spaced from the surface of the origination object and wherein the using further comprises adding a distance from the identified surface of the housing to the surface of the origination object to determine the distance from the origination object to the target.

28. The method as set forth in claim 25 wherein the switch comprises a button and wherein the activating a switch comprises pressing the button from the inactivated position where the button extends out from the identified surface of the housing to the activated position where the button is substantially flush with the identified surface of the housing.

29. The method as set forth in claim 25 further wherein the switch comprises an L-shaped structure which is slidably mounted on another surface of the housing and wherein the activating a switch further comprises moving the switch relative to the housing from the inactivated position to the activated position where an inner surface of the L-shaped structure is in substantially the same plane as the identified surface.

30. The method as set forth in claim 25 wherein the using the received portion of the energy further comprises using a propagation time of the received portion of the energy from a start time when the energy system transmits

the energy to a received time when the energy system receives the portion of the energy which is reflected back from the target and the identification of the surface as the reference plane to determine the distance from the origination object to the target.

5